INCH-POUND

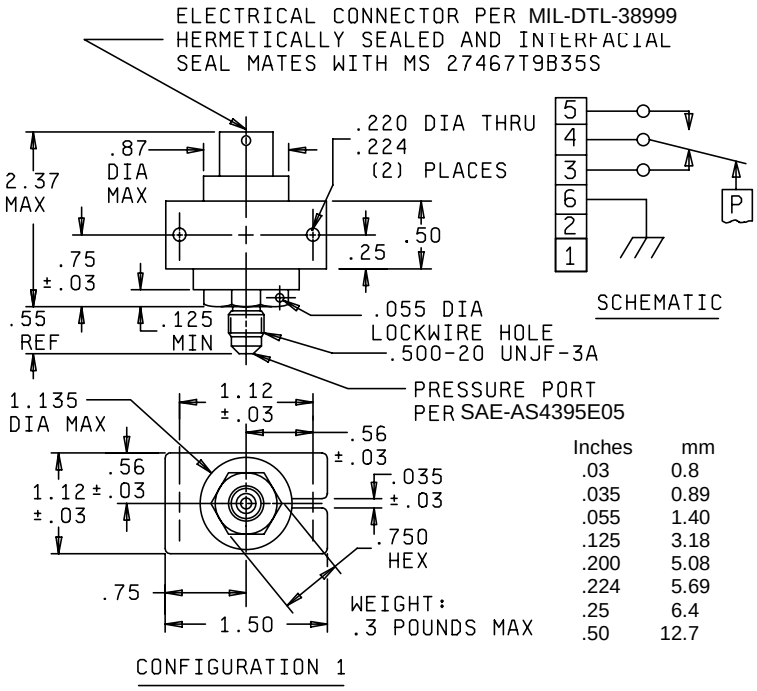
MIL-DTL-9395/39C
30 May 2001
SUPERSEDING
MIL-S-9395/39B
28 Feb 1992

DETAIL SPECIFICATION SHEET

SWITCHES, PRESSURE, (GAUGE) TYPE II, LOW LEVEL TO 5 AMPERES

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification and the issue of the following specification listed in that issue of the Department of Defense Index of Specification and Standards (DODISS) specified in the solicitation: MIL-DTL-9395.



Inches	mm	Inches	mm
.03	0.8	.55	14.0
.035	0.89	.56	14.2
.055	1.40	.750	19.05
.125	3.18	.87	22.1
.200	5.08	1.12	28.4
.224	5.69	1.135	28.83
.25	6.4	1.50	38.1
.50	12.7	2.37	60.2

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Exact shape of switch optional provided dimensions specified are not exceeded and mounting holes and connector location are as specified.
4. Schematic shown is for switches with pressure ports exposed to zero lb_f/in^2.
5. Unless otherwise specified, tolerances are ±.010 (0.25 mm) for three place decimals and ± .02 (.51 mm) for two place decimals.

FIGURE 1. Switches.

REQUIREMENTS:

Dimensions, configuration, and electrical schematic: See figure 1.

Weight: See figure 1.

Calibration: See tables I, II, III, and IV.

System pressure: 180 lb_f/in^2.

Proof pressure: 270 lb_f/in^2.

Burst pressure: 800 lb_f/in^2.

Electrical ratings: See table I.

Minimum current: 25,000 cycles.

Low level: 50,000 cycles.

NOTE: Switches shall be subjected only to low level loads prior to delivery.

Seal:

Electrical chamber: See table I.

Pressure chamber: Hermetic.

Reference chamber: Unsealed.

Electrical connector: See figure 1.

Pressure port: See figure 1.

Media: Dry air; nitrogen gas; fuel in accordance with MIL-DTL-5624; lubricating oil in accordance with MIL-PRF-7808; hydraulic fluid in accordance with MIL-H-5606 or MIL-PRF-83282; oxygen; or Coolanol 25R, or equal.

High temperature (operating and nonoperating): B (275°F).

Low temperature (operating and nonoperating): D (-65°F).

Altitude: C (except 80,000 feet).

Shock: C (100 G).

Vibration: S (test condition D, method 204 of MIL-STD-202), except 10 to 2,000 Hz, 20 G).

Supplemental nonoperating sinusoidal vibration:

Sweep time: 15 minutes.

Frequency range and amplitude: 50 through 81 Hz, .036 inch double amplitude; 81 through 210 Hz, ±12 G; 210 through 298 Hz, .0053 inch double amplitude; 298 through 50 Hz, ±24G.

Test duration: 15 minutes in each of three mutually perpendicular planes.

Life (mechanical): A (100,000 cycles).

Life (electrical): C (50, 000 cycles).

Acceleration: C (8 G).

Pulsation amplitude: A (0 percent).

Pulsation frequency: A (0 Hz).

Pressure rise: A (less than 100 lb_f/in^2).

Dielectric withstanding voltage (at reduced barometric pressure): Applicable at 350 V rms.

Electrical connector torque: 8 foot-pounds.

Pressure port torque: 15 foot-pounds.

Terminal strength: Applicable when terminals are used.

Flame test: Applicable.

Explosion: Applicable.

QUALIFICATION:

Single submission: Restricted to switch submitted.

Group submission: See table V.

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Single submission: Restricted to switch submitted.

Group submission: See table V.

Part or Identifying Number (PIN): Consists of "M" prefix followed by spec sheet number; a dash (-); and a five-letter code. The five-letter code identifies the configuration, electrical rating, and pressure setting mode (code from table I); high-pressure setting (coarse value code from table II) followed by fine value with applicable tolerance (code from table III); and low-pressure setting (coarse value code from table II) followed by fine value with applicable tolerance (code from table III). The five-letter code used in the following example identifies a switch of configuration 1, low level to 1 ampere resistive at 28 V dc, which actuates on increasing pressure at 1.5 $\pm$0.5 lb_f/in^2 and deactuates on decreasing pressure at .5 $\pm$0.5 lb_f/in^2.

EXAMPLE:

M9395/39- A A J A G

"M" prefix and specification sheet number

Configuration, electrical, rating, and pressure setting mode = code "A" of table I

High-pressure setting = code "A" of table II (coarse value of 0 lb_f/in^2 and code "J" of table III (fine value of 1.5 $\pm$ 0.5 lb_f/in^2).

LOW-PRESSURE SETTING = Code "A" of table II (coarse value of 0 lb_f/in^2 and code "G" of table II (fine value of 0.5 $\pm$ 0.5 lb_f/in^2).

NOTE: Design limitations (actuation values and tolerances, deadband and actuation values and tolerances) should be coordinated with the manufacturer(s) listed on the QPL for this spec sheet before specifying a particular "M" number. The fact that operating characteristics can be coded does not necessarily mean that it can be manufactured or acquired.

TABLE I. Codes for combinations of configurations, electrical ratings, and pressure settings modes.

	Low Level to 1 ampere resistive at 28 Vdc		1.5 to 5 amperes at 28 Vdc		Pressure setting mode	
	Configuration 1					
	Electrical chamber				High pressure	Low pressure
	Hermetic	Unsealed	Hermetic	Unsealed		
Code	A	D	G	K	At (or max) 1/	At (or min) 1/
Code	B	E	H	L	At (or max) 1/	Differential 2/
Code	C	F	J	M	Differential 2/	At (or min) 1/

1/ Setting values are designated by codes from table II and III.
2/ Setting values are designated by codes from table IV.

TABLE II. Codes for coarse settings.

Code	Coarse value (lb_f/in^2)	Code	Coarse value (lb_f/in^2)	Code	Coarse value (lb_f/in^2)
A	0	L	30	W	80
B	2.5	M	35	X	85
C	5	N	40	Y	90
D	7.5	P	45	Z	95
E	10	Q	50	1	100
F	12.5	R	55	2	105
G	15	S	60	3	110
H	17.5	T	65	4	115
J	20	U	70	5	120
K	25	V	75	6	125

TABLE III. Codes for combinations of fine settings and tolerance values.

	Fine value (lb_f/in^2) for settings below 20 lb_f/in^2					Tolerance (lb_f/in^2)
	0	0.5	1	1.5	2	
Code	A	B	C	D	E	±0.25
Code	F	G	H	J	K	±0.5
Code	L	M	N	P	Q	±1.0
Code	R	S	T	U	V	±1.5
Code	W	X	Y	Z	1	±2.0
Code	2	3	4	5	6	±2.5
Code	7	8	9	0	- 4/	Min or Max
	Fine value (lb_f/in^2) for settings of 20 lb_f/in^2 and above					Tolerance (lb_f/in^2)
	0	1	2	3	4	
Code	A	B	C	D	E	±1.0 1/
Code	F	G	H	J	K	±2.0 2/
Code	L	M	N	P	Q	±3.0 3/
Code	R	S	T	U	V	±4.0
Code	W	X	Y	Z	1	±5.0
Code	2	3	4	5	6	±6.0
Code	7	8	9	0	- 4/	Min or Max

1/ Not applicable for pressure settings above 33 lb_f/in^2.
2/ Not applicable for pressure settings above 66 lb_f/in^2.
3/ Not applicable for pressure settings above 100 lb_f/in^2.
4/ A dash (-) is used as the code character for these fine setting and tolerance values.

TABLE IV. Codes for differential settings. 1/

Code	Differential value (lb_f/in^2)	Code	Differential value (lb_f/in^2)
A	0	T	11
B	0.5	U	12
C	1	V	13
D	1.5	W	14
E	2	X	15
F	2.5	Y	16
G	3	Z	18
H	3.5	1	20
J	4	2	22
K	4.5	3	24
L	5	4	26
M	5.5	5	28
N	6	6	30
P	7	7	35
Q	8	8	40
R	9	9	45
S	10	0	50

1/ Differential settings require two codes, minimum differential and maximum differential.

TABLE V. Extent of qualification.

PIN	Number of samples required	Tests	Qualifies
Electrical chambers either hermetically sealed or unsealed			
M9395/39-GAJAG -AAJAG -A6R3W -G6R3W	2 ea. resistive 2 ea. intermediate current 2 ea. low level 2 ea. resistive	Complete in accordance with qualification inspection of MIL-DTL-9395	All
Electrical chambers unsealed			
M9395/39-KAJAG -DAJAG -D6R3W -K6R3W	2 ea. resistive 2 ea. current 2 ea. low level 2 ea. resistive	Complete in accordance with qualification inspection of MIL-DTL-9395	Configuration codes D, E, F, K, L, and M

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Review activities:
Army - AV
Navy - AS, MC, SH
Air Force - 19, 99

Preparing activity:
DLA - CC

(Project 5930-1730-15)